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EXAMINER	
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ART UNIT	**PAPER NUMBER**
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8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/593,098	VAN DER TUIJN, ROLAND	
	Examiner	Art Unit	
	Zahedian-Tajnaki GholamReza	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 49 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-49 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

2. The disclosure is objected to because of the following informalities:

- Page 24, line 6: 62 should be replaced with 66
- Page 24, line 7: 64 should be replaced with 66.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1, 3-9, 12-15, 17-22, 24-29, 31-34, 36, 38-44, 46, and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by the Bluetooth specification Version 1.0B, dated 29 November 1999.

Regarding claim 1,12, and 15, 29, and 46, "a single buffer configured to store communication data;" is anticipated by the single TX SCO (synchronous connection oriented) buffer. The Bluetooth specifications disclose a wireless system comprising devices (master and slave) that work in the 2.4 MHz frequency band and providing wireless communications among users. Each device comprises buffers for storing the user data (voice and data). . See Fig. 8.1, page 81, Section 8.1 TX Routine, and Page 20, Section 3 (transmitter characteristics).

"control circuitry coupled with the buffer and configured to selectively extract communication data from only a portion of the buffer and to generate a packet including the communication data extracted from only the portion of the buffer;" is anticipated by the Bluetooth controller, TX SCO buffer, and the packet composer. The switch s2b in conjunction with the Bluetooth controller extract communications data from a portion of the buffer (current or next) and deliver the communications data to the packet composer for further processing and generating packets. See Fig. 8.1 and page 81, Section 8.1 TX Routine.

"control circuitry being configured to selectively address the buffer using an offset address to extract the communication data for provision within at least some of the packets" is anticipated by the Bluetooth controller, TX SCO buffer, and switch S2b (see page 81 and Fig.8.1). Switch S2b switches between the current and next portions of the TX SCO buffer in order to extract the contents of the two buffer portions. Each buffer portion consists of a FIFO register where the payload is stored before being

transferred to the packet composer. Switching between the first FIFO register (current) and the second FIFO register (Next) is off-set addressing of the TX SCO buffer because data is read from different areas (or locations) of the TX SCO buffer. See Fig. 8.1, page 81, Section 8.1 TX Routine, and Page 20, Section 3 (transmitter characteristics).

"communication circuitry coupled with the control circuitry and configured to communicate the packets" is anticipated by the Bluetooth controller, packet composer, and transceiver. Bluetooth is a wireless communications system where packet composer and Bluetooth controller assemble packets and send them to the transceiver for transmission over the radio channel. The transceiver comprises a transmission or communications circuitry in order to send the packets wirelessly. See Fig. 8.1, page 81, Section 8.1 TX Routine, and Page 20, Section 3 (transmitter characteristics).

Regarding claims 3, 17, 24, 31, and 38, "the control circuitry is configured to switch between generation of a first packet type including a first amount of communication data and another packet type including a second amount of communication data" is anticipated by the Bluetooth controller, switch S2b, and the packet composer. The Bluetooth specification discloses HV1, HV2, and HV3 packet types that carry 10, 20, and 30 information bytes respectively (see page 58-59). TX SCO buffer stores different amount of user data (communication data) depending on the sampling rates and consequently different packet types are generated depending on the sampling rate of the user data. The user data having different sampling rates is stored in different portions of the TX SCO buffer (current and next). Using the S2b switch, the

Bluetooth controller may read one packet type from the Current portion of the TX SCO buffer and another kind of packet from the Next portion of the TX SCO buffer. See Fig.8.1; page 81, Section TX Routine

Regarding claims 4, 18, 25, 32, and 39, "the control circuitry is configured to switch between generation of different packet types including respective different amounts of communication data" is anticipated by the Bluetooth controller, switch S2b, and the packet composer which extract HV1, HV2, and HV3 packets (with different payloads) from the common TX SCO buffer and transmitting these packets over the radio channel. See Fig.8.1; page 81, Section TX Routine; and page 58-59.

Regarding claims 5-6, 13, 19, 26-27, 33, 40-41, and 48 "control circuitry configured to extract communication data only from a first portion of the buffer for a given packet and only from a second portion of the a buffer for another packet" is anticipated by the TX SCO buffer, S2b switch, and the Bluetooth controller. The TX SCO Buffer consists of two parts: one current register which can be accessed and read by the Bluetooth controller in order to compose the packets, and one next register that can be accessed by the Bluetooth link manager to load new information. The Bluetooth controller switches between the current and next buffer portions via switch S2b generating HV1, HV2, and HV3 packet types. The Bluetooth specification discloses that the controller and the packet composer extract same or different packet types (i.e., HV1, HV2, or HV3) from the two portions of the buffer. See page 81, Fig.8.1.

"control circuitry configured to selectively offset address the buffer to extracts communication data from a portion of the buffer" is anticipated by the Bluetooth controller, TX SCO buffer, and switch S2b (see page 81 and Fig.8.1). Switch S2b switches between the current and next portions of the TX SCO buffer in order to extract the contents of the two buffer portions. Each buffer portion consists of a FIFO register where the payload is stored before being transferred to the packet composer. Switching between the first FIFO register (current) and the second FIFO register (Next) is off-set addressing of the TX SCO buffer because it switches from one location of the buffer to another location of the buffer. See Fig. 8.1 and page 81, Section 8.1 TX Routine.

Regarding claim 7, "The device according to claim 1 wherein the control circuitry is configured to generate the packets including different amounts of communication data comprising different numbers of data samples" is anticipated by the Bluetooth link manager, Bluetooth controller and the packet composer. The Bluetooth controller and packet composer process SCO traffic carrying different types of packets including HV1, HV2, and HV3 packets (see page 81, Fig.8.1.) The Bluetooth specification discloses that HV1 packet carries 10 information bytes and 1.25 ms of speech, HV2 packet carries 20 information bytes and 2.5 msec of speech, and HV3 packet carries 30 information bytes and 3.75 msec of speech. HV1, HV2, and HV3 packets are all running at 64kbps rate and each is sent every 2, 4, and 6 time slots respectively. The data rate is the same for all packet types at 64kbps resulting in HV1, HV2, and HV3 packets carrying different amount of information bytes. See pages 58-59.

Regarding claims 8-9, 14, 21, 28, 34, and 42-43, "the communication circuitry comprises wireless communication circuitry" is anticipated by the Bluetooth specification. The Bluetooth packet composer sends packets (after processing) to a radio communications channel through Bluetooth's transceiver that operates in the 2.4 MHz frequency band providing wireless communications among users. See page 20, Section 3 (Transmitter Characteristics). See page 41, Section 1 (General Description) 1st, 2nd, 3rd, and 4th paragraphs.

Regarding claim 20, "control circuitry configured to selectively offset address the buffer to extracts communication data from only the portion of the buffer" is anticipated by the Bluetooth controller, TX SCO buffer, and switch S2b (see page 81 and Fig.8.1). The switching between the current and next buffer portions of the TX SCO buffer via S2b switch and Bluetooth controller implies offset addressing of the TX SCO buffer. See Fig. 8.1 and page 81, Section 8.1 TX Routine.

Regarding claim 22, " a buffer configured to store a given amount of communication data;" is anticipated by the TX SCO buffer. See Fig. 8.1 and page 81, Section 8.1 TX Routine.

"control circuitry coupled with the buffer and configured to selectively generate a packet including an amount of communication data different than the given amount of communication data;" is anticipated by the TX SCO buffer, the Bluetooth controller, and

packet composer. See Fig. 8.1 and page 81, Section 8.1 TX Routine. According to the Bluetooth specification, packet types are divided into four separate segments each comprising different packet types. The packets carry different amounts of payloads (information bytes) and a set of overheads (see page 54, Table 4.2, and page 51, Section 4.3 Packet Header) which makes the size of each packet different from the original payload (user data) before it entered the buffer.

"communication circuitry coupled with the control circuitry and configured to communicate the packet" " is anticipated by the Bluetooth controller, packet composer, and transceiver. Bluetooth is a wireless communications system where packet composer is responsible for assembling packets for transmission over the radio channel. The Bluetooth specifications disclose a wireless system comprising devices (master and slave) that work in the 2.4 MHz frequency band and providing wireless communications among users. Each device comprises buffers for storing the user data (voice and data). . See Fig. 8.1, page 81, Section 8.1 TX Routine, and Page 20, Section 3 (transmitter characteristics).

Regarding claim 36, "storing communication data within a single buffer;" is anticipated by the single TX SCO (synchronous connection oriented) buffer. See Fig. 8.1 and page 81, Section 8.1 TX Routine.

"extracting different amounts of communication data from the buffer" " is anticipated by the Bluetooth controller, TX SCO buffer, and switch S2b. These

components extract different packet types (i.e., HV1, HV2, HV3) from the buffer and send the data to the packet composer for further processing (see page 81 and Fig.8.1).

"providing a plurality of packets including the different amounts of communication data" is anticipated by the TX SCO buffer, the Bluetooth controller, and packet composer. See Fig. 8.1 and page 81, Section 8.1 TX Routine. According to the Bluetooth specification, packet types are divided into four separate segments each comprising different packet types. The packets carry different amounts of payloads (information bytes) and a set of overheads (see page 54, Table 4.2, and page 51, Section 4.3 Packet Header).

"communicating the packets after the providing" is anticipated by the Bluetooth controller, packet composer, and transceiver. Bluetooth is a wireless communications system comprising a packet composer that assembles and sends the packets to the transceiver for radio transmission. See Fig. 8.1, page 81, Section 8.1 TX Routine, and Page 20, Section 3 (transmitter characteristics).

Regarding claim 44, "storing communication data within a buffer" is anticipated by the single TX SCO (synchronous connection oriented) buffer. See Fig. 8.1 and page 81, Section 8.1 TX Routine.

"selectively addressing the buffer using a given address to extract communication data from at least a first portion of the buffer; selectively offset addressing the buffer using an offset address to extract communication data from a second portion of the buffer" is anticipated by the Bluetooth controller, TX SCO buffer,

and switch S2b (see page 81 and Fig.8.1). Switch S2b switches between the current and next portions of the TX SCO buffer in order to extract the contents of the two buffer portions. Each buffer portion consists of a FIFO register where the payload is stored before being transferred to the packet composer. Switching between the first FIFO register (current) and the second FIFO register (Next) is off-set addressing of the TX SCO buffer because data is read from different areas (or locations) of the TX SCO buffer. See Fig. 8.1, page 81, Section 8.1 TX Routine, and Page 20, Section 3 (transmitter characteristics).

"providing a plurality of packets individually including one of the first portion of the communication data and the second portion of the communication data" is anticipated by TX SCO buffer, switch S2b, Bluetooth controller, and packet composer. The Bluetooth architecture uses different packet types (i.e., HV1, HV2, HV3) to carry user data after storing the user information in the TX SCO buffer. Bluetooth discloses that different sampling rates generate different communication data (user payload) that is stored in different portions of the TX SCO buffer (Current and Next) before being read by the packet composer. Bluetooth allows dynamic allocation of bandwidth to different applications by automatically changing the sampling rate resulting in generating and placing different communication data in the TX SCO buffer portions (Next and current) and consequently generating same or different packet type. See page 54 section 4.4 (Packet types), Fig. 8.1 and page 81, Section 8.1 TX Routine.

"communicating the packets after the step of providing" is anticipated by the Bluetooth controller, packet composer, and transceiver. Bluetooth is a wireless

communications system comprising a packet composer that assembles and sends the packets to the transceiver for radio transmission. See Fig. 8.1, page 81, Section 8.1 TX Routine, and Page 20, Section 3 (transmitter characteristics).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 16, 23, 30, 37, and 45 are rejected under U.S.C. 103(a) as being unpatentable over the Bluetooth specification in view of Roch Andre Guerin (Hereinafter Guerin) U.S. Patent 6,377,546.

The Bluetooth specification discloses the TX SCO buffer which receives user data (payload) form the Synchronous I/O port, stores the payload in the Current and Next portions of the TX SCO buffer until the data is read by the S2b switch and the Bluetooth controller. The data is then transferred to the packet composer for further processing (See Fig. 8.1 and page 81, Section 8.1 TX Routine). However, the Bluetooth Specification does not disclose a methodology by which a certain type of user

data (payload with different sampling rates) to be stored in a certain portion of the TX SCO buffer and another type of user data in the entire TX SCO buffer.

Guerin discloses a rate guarantee for different streams of data entering a router through buffer management. Further, Guerin discloses that a particular stream can be guaranteed to receive a certain minimum bandwidth at the router through the allocation of predetermined portion of a storage buffer to each stream (see column 5, lines 25-29). Guerin also discloses that at the admission control stage each stream is allocated a certain portion of the total buffer space which is guaranteed to be available to the stream for the purpose of packet processing. If at any point in time a stream needs more buffer space than its initial allotment it may grab buffer space from the shared buffer space (see column 8, lines 3-8). Now using Guerin's approach for example, it is obvious that pre-allocating a certain portion of the buffer to, let's say, HV1 packets and leaving the rest of the buffer as shared will perform the same function of the claimed invention. Since Bluetooth is sending either HV1 or HV2 packets (i.e., in a handset) therefore HV1 packets will use their pre-allocated buffer portion plus the shared portion while the HV2 packets use only the shared portion of the buffer (because there was no pre-allocated buffer space for HV2 packets).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate Guerin's buffer management and rate

guarantee principals to Bluetooth architecture in order to enhance the Bluetooth's buffer management and rate guarantee capabilities.

5. Claims 10, 47 and 49 are rejected under U.S.C. 103(a) as being unpatentable over the Bluetooth specification.

The Bluetooth specification discloses the TX SCO buffer which receives user data (payload) form the Synchronous I/O port, stores the payload in Current and Next portions of the buffer until the data is read by the S2b switch and the Bluetooth controller to be transferred into the packet composer for further processing (See Fig. 8.1 and page 81, Section 8.1 TX Routine). However, the Bluetooth Specification does not disclose a methodology for sending a separate packet every time the data is read from a portion or the entire TX SCO buffer.

The Bluetooth specifications disclose different packet types with their respective structures and sizes. However, Bluetooth does not disclose the size of the TX SCO buffer (total size as well as the Current and the New portion sizes) where user data is stored and later read by the packet composer to compose the Bluetooth packets. For example, if the size of Bluetooth packet is much larger than the size of the TX SCO buffer, then the packet cannot be composed unless the content of the buffer is read several times before a Bluetooth compliant packet can be composed. This results in increased switching of the S2b and S2a switches and extra load on the Bluetooth controller to extract buffer contents several times before a Bluetooth packet can be

composed and transmitted. On the other hand if the size of the buffer is selected such that it stores enough user data to make a Bluetooth packet then it is only necessary for the Bluetooth controller to read the contents of the entire TX SCO buffer (or its portions) only once before a packet is composed and transmitted via the transceiver. This alternative reduces the load on the Bluetooth controller by eliminating the repetitive reading of the buffer contents.

Therefore, it would have been obvious to one with ordinary skills in the art at the time the invention was made to select the size of the TX SCO buffer (and its portions) such that the Bluetooth packets are composed and transmitted after reading the content of the buffer (or its portions) only once in order to lower the processing delay in the packet composer and the load of the Bluetooth controller.

6. Claim 11 is rejected under U.S.C. 103(a) as being unpatentable over the Bluetooth specification in view of Ulrich Boetzel (hereinafter Boetzel), U.S. Patent No. 6,377,541.

The Bluetooth specification discloses the TX SCO buffer which receives user data (payload) form the Synchronous I/O port, stores the payload in Current and Next portions of the buffer until the data is read by the S2b switch and the Bluetooth controller to be transferred into the packet composer for further processing (See Fig. 8.1

and page 81, Section 8.1 TX Routine). However, the Bluetooth Specification does not disclose the TX SCO buffer to be a cyclic buffer.

Boetzel discloses a method and apparatus which comprise reading the data to be transmitted from the cyclical buffer immediately before transmission of the data, and preparing the data for transmission together with signaling and error protection data in a transmission buffer (see column 1, lines 44-49 and lines 59-67). Further, Boetzel argues that the operation of the cyclical-buffer is simpler and less problematic than that of a FIFO storage device (see Column 2, lines 9-17).

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to use cyclic buffers in the Bluetooth TX SCO buffers in order to make the operation of the TX SCO buffers simpler.

7. Claim 35 is rejected under U.S.C. 103(a) as being unpatentable over the Bluetooth specification in view of Boetzel and in further view of Guerin.

The Bluetooth specification discloses the TX SCO buffer which receives user data (payload) form the Synchronous I/O port, stores the payload in the Current and Next portions of the TX SCO buffer until the data is read by the S2b switch, the Bluetooth controller and is transferred to the packet composer for further processing. (See Fig. 8.1 and page 81, Section 8.1 TX Routine). However, the Bluetooth

specification and Boetzel do not disclose a methodology by which a certain type of user data (payload with different sampling rates) to be stored in a certain portion of the TX SCO buffer and another type of user data in the entire TX SCO buffer. Also, the Bluetooth Specification does not disclose a methodology for sending a separate packet every time the data is read from a portion (1st portion, 2nd portion, or 3rd portion or the entire) of the TX SCO buffer. Finally, the Bluetooth Specification does not disclose the TX SCO buffer to be a cyclic buffer.

Guerin discloses a rate guarantee for different streams of data entering a router through buffer management. Further, Guerin discloses that a particular stream can be guaranteed to receive a certain minimum bandwidth at the router through the allocation of predetermined portion of a storage buffer to each stream (see column 5, lines 25-29). Guerin also discloses that at the admission control stage each stream is allocated a certain portion of the total buffer space which is guaranteed to be available to the stream for the purpose of packet processing. If at any point in time a stream needs more buffer space than its initial allotment it may grab buffer space from the shared buffer space (see column 8, lines 3-8).

Boetzel discloses a method and apparatus which comprise reading the data from a cyclical buffer immediately before transmission of the data, and preparing the data for transmission together with signaling and error protection data in a transmission buffer (see column 1, lines 44-49 and lines 59-67). Further, Boetzel argues that the operation

of the cyclical-buffer is simpler and less problematic than that of a FIFO storage device (see Column 2, lines 9-17).

"Bluetooth communications protocol communication device comprising: a cyclical buffer configured to store a maximum amount of communication data to be communicated in a single packet": it would have been obvious to one with ordinary skills in the art at the time the invention was made to select a cyclic buffer (as described by Boetzel) for the TX SCO buffer (and its portions) large enough to allow a Bluetooth compliant packet to be composed and transmitted after reading the buffer contents (or its portions) only once to reduce the queuing delay for the packet and the Bluetooth controller. Also, see explanations for claim 10.

"communication data comprising a plurality of data samples" : it would have been obvious to one with ordinary skill in the art at the time the invention was made to use the Bluetooth's architecture (using different packet sizes;HV1, HV2, Hv3) in order to provide voice communications sampled at different rates in order to provide additional bandwidth for other applications. Also see explanations for claim 7.

"packet composer coupled with the buffer and configured to switch between generation of packets of a first packet type individually including a first amount of communication data from the buffer and of packets of a second packet type individually including a second amount of communication data from the buffer": it would have been obvious to one with ordinary skill in the art at the time the invention was made to use the Bluetooth controller, switch S2b, the packet composer and HV1, HV2, and HV3 packet

formats (comprising different sampling rates, see page 58-59) to generate and switch different packets with different contents in order to dynamically allocate bandwidth to other applications. Also see explanations for claim 3.

"packet composer being further configured to extract communication data from only a portion of the buffer for packets of the first packet type selectively using an offset address and the entire buffer for packets of the second packet type": it would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate Guerin's buffer management principals in the Bluetooth architecture in order to enhance the Bluetooth's buffer management capabilities.

"packet composer is further configured to extract communication data only from a first portion of the buffer for a first packet of the first packet type and only from a second portion of the buffer for a second packet of the first packet type and only from a third portion of the buffer for a third packet of the first packet type": Per Guerin's disclosure, the buffer can be split into three portions where the first two portions are allocated to the first stream (let's say HV1 packets) and the third portion is left as shared buffer portion. Therefore when a stream of the HV1 payload enters the buffer, the data populates the first, the second, and the third portion respectively (depending on traffic load). Also, in view of Boetzel, these buffer portions can be configured to operate in a cyclical manner where data is stored in different buffer portions and read by the Bluetooth controller and switch S2b in a cyclical fashion resulting in generating 1st packet by reading the 1st portion of the buffer, 2nd packet by reading the 2nd portion of the buffer, and 3rd packet by reading the 3rd potion of the buffer. Therefore, it would have been obvious to one

with ordinary skill in the art at the time the invention was made to incorporate Guerins's buffer management methodology and Boetzel's cyclical buffer management to the Bluetooth system in order to improve the buffer management of the Bluetooth system.

"wireless communication circuitry coupled with the packet composer and configured to communicate the packets of the first packet type and the second packet type in accordance with a Bluetooth communications protocol": the Bluetooth architecture uses its a packet composer and transceiver (see Page 20, Section 3 transmitter characteristics) to communicate Bluetooth compliant packets over the radio waves.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- by the Bluetooth specification Version 1.0B dated 29 November 1999.
- Guerin et al U.S. Patent No. 6,377,546 discloses rate guarantees through buffer management.
- Boetzel U.S. Patent No. 6,377,541 discloses a method and apparatus for transmitting a continuous data stream in packetized form.
- Johnston U.S. Patent No. 6,064,649 discloses network interface card for wireless asynchronous transfer mode networks.
- Janoska et al U.S. Patent No. 6,539,024 discloses method and apparatus for data buffer management in a communications switch.
- Blanchard U.S. Patent No. 5,913,031 discloses encoder system level buffer management.
- Gat U.S. Patent No. 5,469,432 discloses high-speed digital communications network.
- Steiner et al U.S. Patent No. 6,529,519 discloses prioritized buffer management for fixed sized packets in multimedia applications.
- Harumoto et al U.S. Patent No. 6,460,097 discloses data stream output apparatus.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zahedian-Tajnaki GholamReza whose telephone number is 703-305-0343. The examiner can normally be reached on 7:30 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 703-308-5463. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-1113.

Seema S. Rao
SEEMA S. RAO 11/3/03
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Zahedian-Tajnaki, GholamReza

G.H.R. Tajnaki

October 29, 2003